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Amphibia Mundi. 1.1. An ergotaxonomy of recent amphibians

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The new publication series *Amphibia Mundi* was presented by DUBOIS (2004a). This will be a series of taxonomic catalogues and regular lists of taxonomic novelties concerning the AMPHIBIA, that will allow users of taxonomic data (biologists, conservationists, administrators, etc.) to find updated information on the state of the art. Contributors to this ambitious endeavour are welcome and should contact our editorial board, either to write some contributions, or to provide information, or to correct some of the mistakes or omissions that our catalogues will unavoidably contain. This first issue of the series presents a list of taxonomic novelties in recent amphibians, i.e., basically a list of new *nomina* (DUBOIS, 2000) recently proposed for amphibians. Information on these novelties must be provided within the frame of a given taxonomy, and respecting strictly the Rules of the *International Code of Zoological Nomenclature* ("the Code"; ANONYMOUS, 1999). These rules, often designated as "Linnaean", have force of law for all zoologists worldwide except those who expressly state that they are following other rules, but then the nomenclature adopted is incompatible with a "Linnaean" one (for details, see DUBOIS, 2005a). The taxonomy used as a framework for *Amphibia Mundi* deserves a few comments.

In most zoological groups, and especially in those like the amphibians, which are currently the matter of numerous phylogenetic works often followed by drastic reappraisals of relationships, any given taxonomy is bound to be provisional. This is by no means problematic, as long as one understands the "heuristic value" of taxonomy (e.g. MAYR, 1981). Taxonomies are not only "results" of phylogenetic and taxonomic research, but may serve as *starting points* for further research, as they provide hypotheses on relationships that can be tested. For each zoological group, until we have reached its "final taxonomy", a goal that is legitimate but which will probably remain out of reach for many decades yet, any taxonomic frame must be viewed as a "working taxonomy" (DUBOIS, 1999) or more shortly an *ergotaxonomy* (DUBOIS, 2005a).

Taxonomy under the "Linnaean" system consists in two different aspects (e.g., DUBOIS, 2005a): establishment or use of *taxa*, and allocation of *ranks* to these taxa. These two aspects are independent and widely different. Establishment or use of *taxa* is a scientific work that relies on a philosophy of taxonomy: it requires a decision regarding which information is believed to be important or crucial to be carried by *taxa* and their *nomina*. Many authors consider that taxonomy should be "phylogenetic", i.e., that *taxa* should, as far as possible (but see DELORME et al., 2004), be "monophyletic sensu

Hennig" or *holophyletic*. Taxa are hierarchically nested within one another, some being more inclusive than others, and there is a single hierarchy of all living beings. A distinct matter is the ranks that are given to these more or less inclusive taxa. Despite several attempts in this respect, there is at present no homogenizing principle that would allow equivalence of taxa at a given rank in different groups: a family of birds is by no criterion equivalent to a family of frogs (DUBOIS, 1988). Ranks are arbitrary and subjective, as are the nomina of taxa. However, just like for the latter, this does not mean that they are useless or harmful and that they should be abandoned. Ranks provide a useful, if not indispensable, system of hierarchisation and indexation of taxonomic information (for more details, discussion and references, see DUBOIS, 2005a). A careful use of ranks allows them to play an important rôle in the *robustness* of ergotaxonomies. Such robustness is an appropriate goal for ergotaxonomies, as they are meant to be useful not only to phylogeneticists and taxonomists but also to all other users of zoological nomina.

To avoid unnecessarily frequent changes in ergotaxonomies, especially back and forth movements between two related taxonomic schemes, any ergotaxonomy chosen for a group should be largely conservative. To attain this goal it should preferably afford *primary key ranks* (e.g., ordo or familia; DUBOIS, 2005b), to taxa that are widely recognized as valid, i.e., that are considered by most authors, on the basis of apparently reliable data, as corresponding to well-supported clades. Such taxa and their nomina are likely to remain unchanged for long periods, which will be appreciated by non-taxonomist users. In contrast, taxa that are more controversial, being less robustly supported by the current set of data, should be afforded secondary key ranks (e.g., legio or phalanx) or even *subsidiary ranks* (e.g., superfamilia or subfamilia) (for more details, see DUBOIS, 2005b). This philosophy was followed for the choice of the ergotaxonomy used in this issue of *Amphibia Mundi*.

In the ergotaxonomy presented below, subfamilies and tribes are recognized only when supported by published phylogenetic hypotheses, even when provisional: some of these taxa are likely to change, but this will not affect very much the overall *familial* scheme. At higher levels, although hypotheses about the relationships between the provisional families as recognized here do exist (for recent data, see e.g.: HAAS, 2003; HOEGG et al., 2004; ROELANTS & BOSSUYT, 2005; SAN MAURO et al., 2005), they are not yet consensual and are still likely to be modified in the coming years. Until a robust cladistic hypothesis is widely accepted, it seems better to refrain from recognizing taxa of rank suborder between family and order, especially as this would raise various nomenclatural problems concerning their best designation (for more details, see DUBOIS, 2004b, 2006). At any rate, in the future, the two nomina **ARCHAEOBATRACHIA** Reig, 1958 and **NEOBATRACHIA** Reig, 1958 must be definitively abandoned, for two distinct but complementary reasons: (1) these nomina are junior homonyms of the nomina **ARCHAEOBATRACHI** Sarasin & Sarasin, 1890 and **NEOBATRACHI** Sarasin & Sarasin, 1890; (2) the nomen **ARCHAEOBATRACHIA** Reig, 1958 was proposed for a taxon that is clearly paraphyletic (references above). The nomen **NEOBATRACHI** Sarasin & Sarasin, 1890 is the valid nomen of the subclass of recent amphibians, that has sometimes been called **LISSAMPHIBIA** Haeckel, 1866. The latter nomen must also be abandoned, being an invalid junior synonym of **BATRACHIA** Brongniart, 1800. More details on nomenclature of higher taxa (above superfamily) of **AMPHIBIA** were provided by DUBOIS (2004b).

Rather than recognizing suborders, a better solution for the time being is to recognize higher ranks in the family-series, i.e., superfamilies (ending in *-oidea*) and epifamilies (ending in *-oidia*), as redefined by DUBOIS (2005b): these taxa do not require the use of other nomina than those of families and may be easily abandoned or modified whenever changes are brought to the clado-taxonomic scheme. The cladistic scheme of SAN MAURO et al. (2005), which largely agrees with other recent studies (HAAS, 2003; ROELANTS & BOSSUYT, 2005) was used as the basic framework for recognition of these higher family-series taxa. For fossil groups, SANCHÍZ (1998) and S. E. EVANS et al. (2005) were largely followed. As explained by DUBOIS (2004b, 2005b), any higher taxon that only includes one taxon of next lower rank, a situation that is sometimes made necessary for taxonomic balance and homogeneity, bears the same nomen as this lower taxon: e.g., epifamily *PELOBATOIDIA* and superfamily *PELOBATOIDEA*,

or superorder † *ALLOCAUDATA* and order † *ALLOCAUDATA*. In such cases, the two ranks are redundant, which causes no nomenclatural problem as long as this does not require formation or recognition of a distinct nomen for each rank (for more details on this controversial question, see DUBOIS, 2005b).

The general ergotaxonomic frame used here is conservative at the *family* level: most of the families have been used for more than a century, and correspond to clades that are consensually recognized by most current authors. In most groups, the ergotaxonomy retained is similar to that given in HUTCHINS et al. (2003), but there are a few important differences, largely related to the inclusion of extinct taxa, but also in a few cases to the acknowledgement of recent cladistic data. Unlike the recent lists of FROST (1985), DUELLMAN (1993) and GLAW et al. (1998), *Amphibia Mundi* provides information on fossil taxa. This has some bearing on the taxonomic frame retained. Because many fossil taxa are known only from partial skeletons, their inclusion in the taxonomy of recent amphibians results in some uncertainties. To limit the impact of this problem, a conservative familial ergotaxonomy was adopted here whenever phylogenetic relationships between taxa are still unsolved or controversial. These taxa were maintained in comprehensive families, which may be split later whenever relationships between them are better understood. Not doing so would result in having many genera unallocated to families, which would simply have to be listed as "incertae sedis" at family level. Given these premises, the taxonomic-nomenclatural scheme adopted here for some families needs a short discussion:

(1) For the "discoglossoid" frogs, the taxonomic scheme of SANCHÍZ (1998: 18) was here followed, with a single family including the *ALYTINAE*, *BOMBINATORINAE*, *DISCOGLOSSINAE* and † *GOBIATINAE*, as the relationships between these four groups are still controversial (HAAS, 2003; HOEGG et al., 2004; ROELANTS & BOSSUYT, 2005; SAN MAURO et al., 2005). Additionally, a few problematic fossil genera are simply referred to the family without subfamilial allocation. The family as here recognized will most probably have to be dismantled when the relationships between all its genera are better understood. In the meanwhile, the valid nomen for this family is *BOMBINATORIDAE*, as pointed out long ago (DUBOIS, 1984). As the International Commission of Zoological Nomenclature decided not to use its plenary powers to protect the nomen *DISCOGLOSSIDAE* (see DUBOIS, 1987d), the *Code's* Rule of Priority must be followed. The nomen *BOMBINATORIDAE* has been used repeatedly in the recent years (e.g.: FORD & CANNATELLA, 1993; BIJU & BOSSUYT, 2003; MAGLIA, 2003; CANNATELLA & HILLIS, 2004; ROELANTS & BOSSUYT, 2005), so it cannot be rejected as a nomen oblitum.

(2) The case of the "pelobatoid" frogs is similar. Recent discussions have not yet led to a consensual hypothesis for relationships among groups (GARCÍA-PARÍS et al., 2003; HAAS, 2003; CANNATELLA & HILLIS, 2004; HOEGG et al., 2004; ROELANTS & BOSSUYT, 2005; SAN MAURO et al., 2005). A provisional conservative scheme with a single family *PELOBATIDAE* was adopted here. This family includes four subfamilies (*MEGOPHYRYINAE*, *PELOBATINAE*, *PELODYTTINAE*, *SCAPHIOPODINAE*) and several fossil genera that cannot be allocated to subfamilies in the present state of knowledge, especially because of apparent convergences between *PELOBATINAE* and *SCAPHIOPODINAE* in their fossorial adaptations.

(3) Two subfamilies are recognized here within the family *PIPIDAE* following B. J. EVANS et al. (2004, 2005). Priority requires that the subfamily including *Xenopus* and *Silurana* be called *DACTYLETHRIDINAE*, as already pointed out repeatedly (DUBOIS, 1983, 1984, 1985, 1987b-c).

(4) The epifamily *RANOIDEA* as recognized here corresponds to the "NEOBATRACHIA" of several recent authors. This clade is robustly supported by most recent analyses (e.g., HOEGG et al., 2004; VAN DER MEIJDEN et al., 2005). It includes two well-supported large clades, recognized here as the superfamilies *HYLOIDEA* and *RANOIDEA*, and two smaller groups of uncertain affinities (HOEGG et al., 2004), recognized here as the superfamilies *HELEOPHYRNOIDEA* and *SOGGLOSSOIDEA*.

(5) No subfamilies are currently recognized in the family *BUFONIDAE*, although this huge assemblage clearly consists of several subclades, some of which have a limited geographical range whereas others have a much larger distribution. In case future works support the formal recognition of

subfamilies, several family-series nomina are already available and should be used to nominate them rather than coining new nomina (DUBOIS, 1984: 34-35, 1987a: 24-29).

(6) The results of DARST & CANNATELLA (2004) and HOEGG et al. (2004) suggest that the subfamily *PSEUDINAE* Fitzinger, 1843 should be considered a synonym of *HYLINEAE* Rafinesque, 1815, not a distinct subfamily.

(7) The recent finding (DARST & CANNATELLA, 2004) that the genus *Brachycephalus* Fitzinger, 1826 (including *Pyilophryne* Izecksohn, 1971, according to KAPLAN, 2002) is phylogenetically nested within eleutherodactylines, as usually understood, suggests that the taxon including these genera should be called *BRACHYCEPHALINAE* Günther, 1858 instead of *ELEUTHERODACTYLINAE* Lutz, 1954 (as used e.g. by DUELLMAN, 2003). The genus *Craugastor* Cope, 1862 was recently recognized for a large part of the species usually placed in *Eleutherodactylus* Duméril & Bibron, 1841 (CRAWFORD & SMITH, 2005), and the latter genus might have to be further split.

(8) The family *RANIDAE* as understood here is a very conservative group which corresponds to the epifamily *RANOIDAE* as recognized by VENCES & GLAW (2001) and VAN DER MEIJDEN et al. (2005). This huge assemblage includes a number of taxa whose relationships are not yet clarified and most of which are here provisionally treated as subfamilies, following DUBOIS (2003) but adding the *MANTELLINAE* and *RHACOPHORINAE*. Treating the latter as families makes the *RANIDAE* paraphyletic (VENCES & GLAW, 2001; VAN DER MEIJDEN et al., 2004, 2005). This family will probably have to be split in several families, but these may correspond only in part to the subfamilies as recognized below, so this move appears premature. Changes are here brought to the following taxa:

(a) VAN DER MEIJDEN et al. (2005) recently pointed to the well-supported existence of a previously undetected radiation in African ranid frogs that includes all genera placed by DUBOIS (2003) in the *CACOSTERNINAE* Noble, 1931 but also the genera *Afrana*, *Natalobatrachus* and *Pyxicephalus*. This finding is acknowledged here in placing all these genera, as well as the clearly related *Amietia* and *Aubria*, in the same subfamily, for which the nomen *PYXICEPHALINAE* Bonaparte, 1850 has priority.

(b) The data of VAN DER MEIJDEN et al. (2005) also suggest that the genus *Occidozyga* is a member of the *DICROGLOSSINAE* (as already proposed by DUBOIS, 1987a, 1992), and therefore the subfamily *OCCIDOZYGINAE* in DUBOIS (2003) is here downgraded to the rank of a tribe of the latter.

(c) In contrast, the same data also strongly suggest that the genus *Ceratobatrachus* and related genera are not members of the *DICROGLOSSINAE* and that the tribe *CERATOBATRACHINI* of DUBOIS (2003) should be provisionally treated as a subfamily of its own. The valid nomen for this subfamily is *CERATOBATRACHINAE* Boulenger, 1884, not *PLATYMAINTINAE* Laurent, 1986, as suggested by VAN DER MEIJDEN et al. (2005). The genus *Batrachylodes*, placed by DUBOIS (1987a, 1992, 2003) in the *RANINAE* without robust evidence, is here tentatively referred to this subfamily mostly on the grounds of reproductive mode (direct development) and biogeography.

(d) In the tribe *LIAMONECTINI* of the *DICROGLOSSINAE*, the genus *Liurana* Dubois, 1987 is here considered a strict synonym of *Taylorana* Dubois, 1987 (DUBOIS & ÖHLER, in preparation). Priority of *Taylorana* over *Liurana* was fixed by the first-reviser action of DUBOIS (1999: 91).

(e) Cladistic relationships within the subfamily *RANINAE* as recognized by DUBOIS (2003) remain very poorly known and will require additional data. This will not be not an easy task because, as already pointed out (DUBOIS, 1981, 1987a, 1992, 2003), such a revision to be meaningful cannot be limited to analysis of a subsample of the subfamily, chosen e.g. on geographical grounds (e.g., HILLIS & WILCOX, 2005), but must include representatives of at least all groups and subgroups defined by DUBOIS (1992), and probably more. The tribe *AMOLOPINI* Yang, 1991, recognized by DUBOIS (2003), is not adopted here, as its relationships and contents are not yet fully understood. The genus *Odorrana* Fei, Ye & Huang, 1991 should probably be separated from *Rana* (DUBOIS, 2003), but its relationships with several

other groups (e.g.: *Bamburana* Fei, Ye & Huang, 2005; *Chalcorana* Dubois, 1992; *Eburana* Dubois, 1992; *Nasirana* Dubois, 1992) should first be clarified. Except for the genera *Afrana*, *Amietia* and *Strongylopus*, here placed in the *Pyxicephalinae* for reasons explained above, the genus *Rana* is here kept as a wide and probably polyphyletic assemblage (DUBOIS, 1992) to avoid the creation of paraphyletic genera, which would certainly be the case if e.g. *Ammirana* Dubois, 1992, *Hylarana* Tschudi, 1838, *Pelophylax* Fitzinger, 1843, *Pseudorana* Fei, Ye & Huang, 1991 or *Rugosa* Fei, Ye & Huang, 1991 were raised to generic rank, as proposed by some recent authors (e.g., FEI et al., 1991, 2005; VAN DER MEIJDEN et al., 2005).

(f) On the other hand, within the *RANINAE*, a new tribe *STAUROIINI* (type-genus *Staurois* Cope, 1865) is here erected for the genus *Staurois* alone. The diagnosis of this tribe is as follows: its members share two important characters with the *RHACOPHORINAE*, i.e. completely closed ventral cells on digital disks and glandular belly skin (DUBOIS, 1992: 321, 334; BOSSUYT & DUBOIS, 2001: 4), and show other synapomorphies for the *RANINAE*, such as special courtship display (HARDING, 1982) and unusual keratodont formulae in tadpoles (ALTIG & MCDIARMID, 1999: 331). BOSSUYT & DUBOIS (2001: 4) wrote about the genus *Staurois*: "In fact, but for the absence of intercalary cartilages on digits, there seems to be little reason for not assigning the genus *Staurois* to the *Rhacophorinae*". According to recent molecular data (ROELANTS et al., 2004), this genus appears as the sister-group of all other *RANINAE*.

(g) The relationships of the other groups of *RANIDAE* (as here understood) are not yet clarified (e.g., VAN DER MEIJDEN et al., 2005), so these groups are here provisionally maintained as the subfamilies *CONRAUINAE*, *LANKANECTINAE*, *MICRIXALINAE*, *NYCTIBATRACHINAE*, *PTYCHADENINAE*, *RANIXALINAE*, *PETROPEDETINAE* and *PHRYNOBATRACHINAE*. The latter two groups were included by DUBOIS (2003) in a single subfamily *PETROPEDETINAE*, but this taxon appears paraphyletic according to the data of VAN DER MEIJDEN et al. (2005).

(8) The recent molecular data of DARST & CANNATELLA (2004) and VAN DER MEIJDEN et al. (2004, 2005) support the opinion of LAURENT (1980, 1986) and DUBOIS (1981, 1987a, 1992) that the *ARTHROLEPTINAE*, *ASTYLOSTERNINAE* and *HYPEROLINAE* belong in the same clade, recognized by VENCES & GLAW (2001) and VAN DER MEIJDEN et al. (2005) as the epifamily *ARTHROLEPTOIDEA*. But these data also suggest that two other groups, traditionally recognized as the *MICROHYLIDAE* *BREVICIPTINAE* and the *HEMISOTIDAE*, are also members of this clade. To account for these findings, these five groups are here recognized as subfamilies of a single, purely African, family, which must bear the nomen *BREVICIPTIDAE*. This is not because "the oldest available genus name in this clade is *Breviceps* Merrem, 1920" (DARST & CANNATELLA, 2004: 468), as priority among family-series nomina is determined by the dates of the latter nomina, not by those of the nomina of their included genera! The valid nomen in this case is *BREVICIPTINA* Bonaparte, 1850, which has priority over *HEMISIDAE* Cope, 1867 and *ARTHROLEPTINA* Mivart, 1869. In Linnaean nomenclature, *BREVICIPTINA*, *BREVICIPTINAE*, *BREVICIPTIDAE* or *BREVICIPTOIDEA* are simply different aponyms of the same nomen (see DUBOIS, 2000), which have the same author and date but "simply" different ranks: it is thus incorrect to write that there "seems to be no available superfamily name" for this taxon (DARST & CANNATELLA, 2004: 468). Besides the five subfamilies listed above, a sixth subfamily is here recognized in this family for the *LEPTOPELINAE*, which according to EMERSON et al. (2000) represent a subclade distinct from the *HYPEROLINAE*.

(9) In the urodelan family *PLETHODONTIDAE*, the traditional taxonomy (WAKE, 2003) has been challenged by recent findings. The molecular phylogenetic data recently provided by CHIPPINDALE et al. (2004) suggest the existence of two major lineages, for which the nomina *HEMIDACTYLINAE* and *PLETHODONTINAE* are available. The first lineage seems to include three subclades, which can be provisionally recognized as tribes, under the nomina *BOLITOGLOSSINI*, *HEMIDACTYLINI* and *SPELLERPINI*. In this group, the genus *Eurycea* Rafinesque, 1822 is here understood as including the taxa traditionally known as the genera *Haideotriton* Carr, 1939, *Typhlomolge* Stejneger, 1896 and *Typhlotriton* Stejneger, 1893, as well as other taxa more recently recognized (HILLIS et al., 2001). The second lineage of

PLETHODONTIDAE seems to include two subclades, for which the nomina *DESMOGNATHINI* and *PLETHODONTINI* are available. The new data obtained by MUELLER et al. (2004), and by MIN et al. (2005) on the occasion of the discovery of *Karsenia koreana*, furthermore suggest that the genus *Hydromantes* s.l. (including *Speleomantes*) must be placed in the *DESMOGNATHINI*, rather than in the *BOLITOGLOSSINI*. The phylogeny and taxonomy of this family are still under intense study and will probably have to be modified in the near future.

(10) In the family *SALAMANDRIDAE*, on the basis of "molecular studies in progress" ("estudios moleculares en curso"), GARCÍA-PARÍS et al. (2004) recently split the genus *Triturus* in four genera, recognizing the genera *Lissotriton*, *Mesotriton* and *Ommatotriton*. No subfamilies are currently recognized in this family, although LAURENT (1986) had recognized three subfamilies, including respectively the genera *Pleurodeles*, *Salamandra* and *Triturus* (and other genera in each). If, following ongoing works, this or a similar arrangement had to be adopted, the valid nomina for these three subfamilies would be, respectively, *PLEURODELINAE* TSCHUDI, 1838, *SALAMANDRINAE* Goldfuss, 1820 and *MOLGINAE* Gray, 1850 (see DUBOIS, 1985).

(11) Beside the three traditional orders *ANURA*, *URODELA* and *GYMNOPHIONA* (for their valid nomina see DUBOIS, 2004b), an order † *ALLOCAUDATA* is here tentatively recognized for the family † *ALBERPETONTIDAE* in order to account for the results of MCGOWAN & EVANS (1995).

The ergotaxonomy used in this first issue of *Amphibia Mundi* will certainly have to be modified in subsequent issues. The list below only mentions the nomina of taxa currently considered valid on the basis of published evidence, except in a few cases mentioned above. Hierarchy of taxa is shown by indentation from margin, and ranks of class-series and family-series taxa (DUBOIS, 2005a-b) are written in full. Taxa of same rank subordinate to the same taxon are listed by alphabetical order. Synonyms, subgenera and other infrageneric supraspecific taxa, species and subspecies are not listed. Nomina of entirely fossil taxa are preceded by the sign †.

Classis **AMPHIBIA** De Blainville, 1816

Subclassis **NEOBATRACHI** Sarasin & Sarasin, 1890

Superordo † **ALLOCAUDATA** Fox & Naylor, 1982

Ordo † **ALLOCAUDATA** Fox & Naylor, 1982

Epifamilia † **ALBANERPETONTOIDIA** Estes & Hoffstetter, 1976

Superfamilia † **ALBANERPETONTOIDEA** Estes & Hoffstetter, 1976

Familia † **ALBANERPETONTIDAE** Estes & Hoffstetter, 1976

† *Albanerpeton* Estes & Hoffstetter, 1976

† *Anoualerpeton* Gardner, Evans & Sigogneau-Russell, 2003

† *Celtedens* McGowan & Evans, 1995

† *Nukusurus* Nessov, 1981

Superordo **BATRACHIA** Brongniart, 1800

Ordo **ANURA** Duméril, 1806

Incertae sedis

† *Aralobatrachus* Nessov, 1981

† *Avitabatrachus* Báez, Trueb & Calvo, 2000

† *Batrachulina* Kuhn, 1962

† *Comobatrachus* Hecht & Estes, 1960

† *Czathobatrachus* Evans & Borsuk-Bialynicka, 1998

† *Eobatrachus* Marsh, 1887

† *Eorubeta* Hecht, 1960

† *Estesina* Roček & Nessov, 1993

† *Gobiatooides* Roček & Nessov, 1993

- † *Hatzegobatrachus* Venczel & Csiki, 2003
- † *Itemirella* Nessov, 1981
- † *Liventsovika* Ratnikov, 1993
- † *Lutetiobatrachus* Wuttke, 1988
- † *Mesophryne* Gao & Wang, 2001
- † *Negatchevkia* Ratnikov, 1993
- † *Nezpercius* Blob, Carrano, Rogers, Forster & Espinoza, 2001
- † *Novosokolia* Ratnikov, 1993
- † *Probatrachus* Peters, 1878
- † *Procerobatrachus* Roček & Nessov, 1993
- † *Protophrymus* Pomel, 1953
- † *Saevesoederberghia* Roček & Nessov, 1993
- † *Summybatrachus* Evans & McGowan, 2002
- † *Thaumastosaurus* De Stefano, 1903
- † *Theatoni* Fox, 1976
- † *Yizhoubatrachus* Gao & Chen, 2004
- Familia † *PROSALIRIDAE* Shubin & Jenkins, 1995
 - † *Prosalirus* Kuhn, 1964
- Familia † *RANAVINAE* Fejérváry, 1920
 - † *Ranavus* Portis, 1885
- Familia † *TREGOBATRACHIDAE* Holman, 1974
 - † *Tregobatrachus* Holman, 1974
- Familia † *VIERAELLIDAE* Kuhn, 1964
 - † *Vieraella* Reig, 1961
- Epifamilia *BOMBINATOROIDIA* Gray, 1825
- Superfamilia *BOMBINATOROIDEA* Gray, 1825
- Familia *BOMBINATORIDAE* Gray, 1825
- Incertae sedis
 - † *Altanulia* Gubin, 1993
 - † *Callobatrachus* Wang & Gao, 1997
 - † *Enneabatrachus* Evans & Milner, 1993
 - † *Latoglossus* Hossini, 2000
 - † *Montsechobatrachus* Fejérváry, 1921
 - † *Opisthocoelellus* Kuhn, 1941
 - † *Pelophilus* Tschudi, 1838
 - † *Scotiophryne* Estes, 1969
- Subfamilia *ALYTINAE* Fitzinger, 1843
 - Alytes* Wagler, 1829
 - † *Kizylkuma* Nessov, 1981
- Subfamilia *BOMBINATORINAE* Gray, 1825
 - Barbourula* Taylor & Noble, 1924
 - Bombina* Oken, 1816
- Subfamilia *DISCOGLOSSINAE* Günther, 1858
 - Discoglossus* Otth, 1837
 - † *Eodiscoglossus* Villalta, 1956
 - † *Latonia* Meyer, 1843
 - † *Paradiscoglossus* Estes & Sanchiz, 1982
 - † *Paralaton* Venczel & Csiki, 2003
 - † *Waldenbatrachus* Fey, 1988

- Subfamilia † *GOLATINAE* Roček & Nessov, 1993
 - † *Cretasalia* Gubin, 1999
 - † *Gobiatres* Špinar & Tatarinov, 1986
- Epifamilia *LEIOPELMATOIDIA* Mivart, 1869
 - Superfamilia *LEIOPELMATOIDEA* Mivart, 1869
 - Familia *ASCAPHIDAE* Fejérváry, 1923
 - Ascaphus* Stejneger, 1899
 - Familia *LEIOPELMATIDAE* Mivart, 1869
 - Subfamilia *LEIOPELMATINAE* Mivart, 1869
 - Leiopelma* Fitzinger, 1861
 - Subfamilia † *NOTOBATRACHINAE* Reig, 1957
 - † *Notobatrachus* Reig, 1956
 - Epifamilia *PELOBATOIDIA* Bonaparte, 1850
 - Superfamilia *PELOBATOIDEA* Bonaparte, 1850
 - Familia *PELOBATIDAE* Bonaparte, 1850
 - Incertae sedis
 - † *Liaobatrachus* Ji Shu'an & Ji Quang, 1998
 - † *Macropelobates* Noble, 1924
 - † *Uldzinia* Gubin, 1996
 - Subfamilia *MEGOPHRYINAE* Bonaparte, 1850
 - Tribus *LEPTOBRACHINI* Dubois, 1983
 - Leptobranchella* Smith, 1925
 - Leptobranchium* Tschudi, 1838
 - Leptolalax* Dubois, 1980
 - Oreolalax* Myers & Leviton, 1962
 - Scutiger* Theobald, 1868
 - Tribus *MEGOPHRYINI* Bonaparte, 1850
 - Brachytarsophrys* Tian & Hu, 1983
 - Megophrys* Kuhl & Van Hasselt, 1822
 - Ophryophryne* Boulenger, 1903
 - Xenophrys* Günther, 1864
 - Subfamilia *PELOBATINAE* Bonaparte, 1850
 - † *Eopelobates* Parker, 1929
 - Pelobates* Wagler, 1830
 - Subfamilia *PELODYTINAE* Bonaparte, 1850
 - † *Miopelodytes* Taylor, 1941
 - Pelodytes* Bonaparte, 1838
 - † *Tephrodytes* Henrici, 1994
 - Subfamilia *SCAPHIOPODINAE* Cope, 1865
 - Scaphiopus* Holbrook, 1836
 - Spea* Cope, 1866
- Epifamilia *PIPOIDIA* Gray, 1825
 - Superfamilia *PIPOIDEA* Gray, 1825
 - Incertae sedis
 - † *Aygroua* Jones, Evans & Sigogneau-Russell, 2003
 - † *Thoraciliacus* Nevo, 1968
 - Familia † *PALAEOBATRACHIDAE* Cope, 1865
 - † *Albionbatrachus* Meszoely, Špinar & Ford, 1984
 - † *Messelobatrachus* Wuttke, 1988

- † *Palaeobatrachus* Tschudi, 1838
- † *Phobatrachus* Fejerváry, 1917
- Familia *PIPIDAE* Gray, 1825
 - Incertae sedis
 - † *Cordicephalus* Nevo, 1968
 - † *Eccenopoides* Haughton, 1931
 - † *Lankubatrachus* Báez & Pugener, 2003
 - † *Shomronella* Estes, Špinar & Nevo, 1978
 - † *Thoracihacus* Nevo, 1968
 - Subfamilia *DACTYLETHRINAE* Hogg, 1838
 - † *Pachycentrata* Baez & Rage, 2004
 - † *Saltena* Reig, 1959
 - † *Shelania* Casamiquela, 1960
 - Saurana* Gray, 1864
 - Xenopus* Wagler, 1827
 - Subfamilia *PIPINAE* Gray, 1825
 - Hymenochirus* Boulenger, 1896
 - Pipa* Laurenti, 1768
 - Pseudhymenochirus* Chabanaud, 1920
- Familia *RHINOPHRYNIDAE* Günther, 1858
 - † *Chelomophrynus* Henrici, 1991
 - † *Eorhinophrynus* Hecht, 1959
 - † *Rhadinosteus* Henrici, 1998
 - Rhinophrynus* Dumeril & Bibron, 1841
- Epifamilia *RANOIDA* Rafinesque-Schmaltz, 1814
 - Superfamilia *HELEOPHRYNODEA* Noble, 1931
 - Familia *HELEOPHRYNIDAE* Noble, 1931
 - Heleophryne* Sclater, 1899
 - Superfamilia *HYLOIDEA* Rafinesque, 1815
 - Familia *ALLOPHRYNIDAE* Goin, Goin & Zug, 1978
 - Allophryne* Gaige, 1926
- Familia *BUFONIDAE* Gray, 1825
 - Adenomus* Cope, 1860
 - Aliphrynoides* Dubois, 1987
 - Andanophryne* Hoogmoed, 1985
 - Ansoma* Stoliczka, 1870
 - Atelophryniscus* McCranie, Wilson & Williams, 1989
 - Atelopus* Duméril & Bibron, 1841
 - Bufo* Laurenti, 1768
 - Bufoides* Pillai & Yazdani, 1973
 - Capensibufo* Grandison, 1980
 - Churamtu* Channing & Stanley, 2002
 - Crepidophryne* Cope, 1889
 - Dendrophryniscus* Jiménez de la Espada, 1871
 - Didynamipus* Andersson, 1903
 - Frostius* Cannatella, 1986
 - Laurentophryne* Tihen, 1960
 - Leptophryne* Fitzinger, 1843
 - Melanophryniscus* Gallardo, 1961
 - Mertensophryne* Tihen, 1960

- Metaphrymascus* Señaris, Ayarzagüena & Gorzula, 1994
Nectophryne Buchholz & Peters, 1875
Nectophrynoides Noble, 1926
Nimbaphrynoides Dubois, 1987
Oreophrynella Boulenger, 1895
Osornophryne Ruiz-Carranza & Hernández-Camacho, 1976
Parapleophryne Fei, Ye & Jiang, 2003
Pedostibes Gunther, 1876
Pelophryne Barbour, 1938
Phrynomis Fitzinger, 1843
Pseudobufo Tschudi, 1838
Rhamphophryne Trueb, 1971
Schismaderma Smith, 1849
Spmophrynoides Dubois, 1987
Stephopaedes Channing, 1978
Truebella Graybeal & Cannatella, 1995
Werneria Poche, 1903
Wolterstorffina Mertens, 1939
Familia CENTROLENIDAE Taylor, 1951
Centrolene Jiménez de la Espada, 1872
Cochranella Taylor, 1951
Hyalmobatrachium Ruiz-Carranza & Lynch, 1991
Familia DENDROBATIDAE Cope, 1865 (1850)
Allobates Zimmermann & Zimmermann, 1988
Aromobates Myers, Paolillo & Daly, 1991
Colostethus Cope, 1866
Cryptophyllobates Lötters, Jungfer & Widmer, 2000
Dendrobates Wagler, 1830
Epipedobates Myers, 1987
Mannophryne LaMarca, 1992
Nephelobates La Marca, 1994
Phyllobates Duméril & Bibron, 1841
Familia HYLIDAE Rafinesque, 1815
Subfamilia HEMIPHRACTINAE Peters, 1862
Cryptobatrachus Ruthven, 1916
Flectonotus Miranda-Ribeiro, 1920
Gastrotheca Fitzinger, 1843
Hemiphractus Wagler, 1828
Stefania Rivero, 1968
Subfamilia HYLINAE Rafinesque, 1815
Acris Duméril & Bibron, 1841
Anotheca Smith, 1939
Aparasphenodon Miranda-Ribeiro, 1920
Aplastodiscus Lutz, 1950
Argenteohyla Trueb, 1970
Corythomantis Boulenger, 1896
Duellmanohyla Campbell & Smith, 1992
Hyla Laurenti, 1768
Lysapsus Cope, 1862
Nyctimantis Boulenger, 1882

Osteocephalus Steindachner, 1862
Osteopilus Fitzinger, 1843
Phrynohyas Fitzinger, 1843
Phyllodytes Wagler, 1830
Plectrohyla Brocchi, 1877
† *Proacris* Holman, 1961
Pseudacris Fitzinger, 1843
Pseudis Wagler, 1830
Pternohyla Boulenger, 1882
Psychohyla Taylor, 1944
Scarohyla Duellman & De Sá, 1988
Scinax Wagler, 1830
Smitisca Cope, 1865
Sphaenorhynchus Tschudi, 1838
Tepuihyla Ayarzagüena, Señaris & Gorzula, 1992
Trachycephalus Tschudi, 1838
Triprion Cope, 1866
Xenohyla Izecksohn, 1998

Subfamilia *PELODRYADINAE* Günther, 1858

Cyclorana Steindachner, 1867
† *Etmabatrachus* Hochnull, 2003
Litoria Tschudi, 1838
Nyctimystes Stejneger, 1916
Pelodryas Günther, 1859

Subfamilia *PHYLLOMEDUSINAE* Günther, 1858

Agalychnis Cope, 1864
Hylomantis Peters, 1872
Pachymedusa Duellman, 1968
Phasmahyla Cruz, 1991
Phrynomedusa Miranda-Ribeiro, 1923
Phyllomedusa Wagler, 1830

Familia *LEPTODACTYLIDAE* Werner, 1896 (1838)

Incertae sedis

† *Estesiella* Báez, 1995

Subfamilia *BRACHYCEPHALINAE* Günther, 1858

Adelophryne Hoogmoed & Lescure, 1984
Atopophryne Lynch & Ruiz-Carranza, 1982
Barycholos Heyer, 1969
Brachycephalus Fitzinger, 1826
Craugastor Cope, 1862
Dischidodactylus Lynch, 1979
Eleutherodactylus Dumeril & Bibron, 1841
Euparkerella Griffiths, 1959
Geobatrachus Ruthven, 1915
Holoaden Miranda-Ribeiro, 1920
Ischnocnema Reinhardt & Lütken, 1862
Phrynopus Peters, 1874
Phyllonastes Heyer, 1977
Physelaphryne Heyer, 1977

Subfamilia CERATOPHRYNINAE Tschudi, 1838

† *Baurubatrachus* Báez & Peri, 1990*Ceratophrys* Wied-Neuwied, 1824*Chacophrys* Reig & Limeses, 1963*Lepidobatrachus* Budgett, 1899† *Wauvela* Casamiquela, 1959

Subfamilia CYCLORAMPHINAE Bonaparte, 1850

Crossodactylodes Cochran, 1938*Cycloramphus* Tschudi, 1838*Parateimnotobius* Lutz & Carvalho, 1958*Rupirana* Heyer, 1999*Scythrophrys* Lynch, 1971*Thoropa* Cope, 1865*Zachasius* Cope, 1866

Subfamilia HYLODINAE Günther, 1858

Crossodactylus Duméril & Bibron, 1841*Hylodes* Fitzinger, 1826*Megaelosia* Miranda-Ribeiro, 1923

Subfamilia LEPTODACTYLINAE Werner, 1896 (1838)

Adenomera Steindachner, 1867*Edalorhina* Jiménez de la Espada, 1870*Hydrolaetare* Gaillard, 1963*Leptodactylus* Fitzinger, 1826*Limnomedusa* Fitzinger, 1843*Lithodytes* Fitzinger, 1843*Physalaemus* Fitzinger, 1826*Pleurodema* Tschudi, 1838*Pseudopaludicola* Miranda-Ribeiro, 1926*Vanzolinius* Heyer, 1974

Subfamilia ODONTOPHRYNINAE Lynch, 1969

Macrogemolotus Carvalho, 1946*Odontophrynus* Reinhardt & Lütken, 1862*Proceratophrys* Miranda-Ribeiro, 1920

Subfamilia TELMATOBINAE Fitzinger, 1843

Alsodes Bell, 1843*Atelognathus* Lynch, 1978*Batrachophrynus* Peters, 1873*Batrachyla* Bell, 1843*Cauduverbera* Laurenti, 1768*Eupsophus* Fitzinger, 1843*Hylorina* Bell, 1843*Insuetophrynus* Barrio, 1970† *Neoprocoela* Schaeffer, 1949*Somuncuria* Lynch, 1978*Telmatobius* Wiegmann, 1835*Telmatobufo* Schmidt, 1952

Família MYOBATRACHIDAE Schlegel, 1850

Incertae sedis

† *Indobatrachus* Noble, 1930

Subfamilia *LIMNODYNASTINAE* Lynch, 1969

- Adelotus* Ogilby, 1907
- Heleoporus* Gray, 1841
- Kyarranus* Moore, 1958
- Lechriodus* Boulenger, 1882
- Limnodynastes* Fitzinger, 1843
- Mixophyes* Günther, 1864
- Neobatrachus* Peters, 1863
- Notaden* Gunther, 1873
- Phloria* Spencer, 1901

Subfamilia *MYOBATRACHINAE* Schlegel, 1850

- Arenophryne* Tyler, 1976
- Asa* Tyler, 1972
- Bryobatrachus* Rounsevell, Ziegeler, Brown, Davies & Littlejohn, 1994
- Crinia* Tschudi, 1838
- Geocrinia* Blake, 1973
- Metacrinia* Parker, 1940
- Myobatrachus* Schlegel, 1850
- Paracrinia* Heyer & Liem, 1976
- Pseudophryne* Fitzinger, 1843
- Rheobatrachus* Liem, 1973
- Spicospina* Roberts, Horwitz, Wardell-Johnson, Maxson & Mahony, 1997
- Taudactylus* Straughan & Lee, 1966
- Uperoleia* Gray, 1841

Familia *RHINODERMATIDAE* Bonaparte, 1850

- Rhinoderma* Duméril & Bibron, 1841

Superfamilia *RANOIDEA* Rafinesque-Schmaltz, 1814

Incertae sedis

- † *Ranomorphus* Ratnikov, 1993

Familia *BREVICIPTIDAE* Bonaparte, 1850Subfamilia *ARTHROLEPTINAE* Mivart, 1869

- Arthrolepis* Smith, 1849
- Cardioglossa* Boulenger, 1900

Subfamilia *ASTYLOSTERNINAE* Noble, 1927

- Astylosternus* Werner, 1898
- Leptodactylodon* Andersson, 1903
- Nyctabates* Boulenger, 1904
- Scotobleps* Boulenger, 1900
- Trichobatrachus* Boulenger, 1900

Subfamilia *BREVICIPTINAE* Bonaparte, 1850

- Balebreviceps* Largen & Drewes, 1989
- Breviceps* Merrem, 1820
- Callulma* Nieden, 1910
- Probreviceps* Parker, 1931
- Spelaophryne* Ahl, 1924

Subfamilia *HEMISOTINAE* Cope, 1867

- Hemisus* Günther, 1859

Subfamilia *HYPEROLIINAE* Laurent, 1943

- Tribus *HYPEROLIINI* Laurent, 1943
- Acanthixalus* Laurent, 1944

- Afraxalus* Laurent, 1944
- Alexteroon* Perret, 1988
- Arlequinus* Perret, 1988
- Callixalus* Laurent, 1950
- Chlorolus* Perret, 1988
- Chrysobatrachus* Laurent, 1951
- Cryptothylax* Laurent & Combaz, 1950
- Heterixalus* Laurent, 1944
- Hyperolus* Rapp, 1842
- Kassimula* Laurent, 1940
- Tachycinemus* Fitzinger, 1843
- Tribus *KASSININI* Laurent, 1972
 - Kassina* Girard, 1853
 - Opisthothylax* Perret, 1966
 - Paracassina* Peracca, 1907
 - Phlyctimantis* Laurent & Combaz, 1950
 - Semnodactylus* Hoffman, 1939
- Subfamilia *LEPTOPELINAE* Laurent, 1972
 - Leptopelis* Gunther, 1859 1869
- Familia *MICROHYLIDAE* Gunther, 1858 (1843)
- Subfamilia *ASTEROPHRYINAE* Gunther, 1858
 - Incertae sedis
 - † *Australobatrachus* Tyler, 1976
 - Tribus *ASTEROPHRYINI* Günther, 1858
 - Asterophrys* Tschudi, 1838
 - Hylophorbus* Macleay, 1878
 - Maniophryne* Boulenger, 1897
 - Pherohasps* Zweifel, 1972
 - Tribus *BARYGENYNI* Burton, 1986
 - Barygenys* Parker, 1936
 - Tribus *CALLULOPINI* Dubois, 1988
 - Callulops* Boulenger, 1888
 - Tribus *XENORHINI* Mivart, 1869
 - Xenobatrachus* Peters & Doria, 1878
 - Xenorhina* Peters, 1863
- Subfamilia *CALLURILINAE* Fei, Ye & Jiang, 2005
 - Calluella* Stoliczka, 1872
- Subfamilia *COPHYLINAE* Cope, 1889
 - Anodonthyla* Müller, 1892
 - Cophyla* Boettger, 1880
 - Madecassophryne* Guibé, 1974
 - Platypelis* Boulenger, 1882
 - Plethodontohyla* Boulenger, 1882
 - Rhombophryne* Boettger, 1880
 - Stumpffia* Boettger, 1881
- Subfamilia *DYSCOPHINAE* Boulenger, 1882
 - Dyscophus* Granddier, 1872
- Subfamilia *GENYOPHRYNINAE* Boulenger, 1890
 - Albericus* Burton & Zweifel, 1995

- Aphantophryne* Fry, 1917
Austrochaperina Fry, 1912
Choerophryne Van Kampen, 1915
Cophixalus Boettger, 1892
Copula Mehely, 1901
Genyophryne Boulenger, 1890
Laophryne Boulenger, 1897
Oreophryne Boettger, 1895
Oxydactyla Van Kampen, 1913
Sphenophryne Peters & Doria, 1878
 Subfamilia *HOPLOPHRYNINAE* Noble, 1931
Hoplophryne Barbour & Loveridge, 1928
Parhoplophryne Barbour & Loveridge, 1928
 Subfamilia *MICROHYLINAE* Günther, 1858 (1843)
 Tribus *GASTROPHRYNINI* Fitzinger, 1843
Adelastes Zweifel, 1986
Atingus Wild, 1995
Arcovomer Carvalho, 1954
Chiasmocleis Mehely, 1904
Ctenophryne Mocquard, 1904
Dasylops Miranda-Ribeiro, 1924
Dermatonotus Mehely, 1904
Elachistocleis Parker, 1927
Gastrophryne Fitzinger, 1843
Hamptophryne Carvalho, 1954
Hyophryne Carvalho, 1954
Hypopachus Kesterstein, 1867
Myersella Carvalho, 1954
Nelsonophryne Frost, 1987
Otophryne Boulenger, 1900
Stereocyclops Cope, 1870
Synapturanus Carvalho, 1954
Syncope Walker, 1973
 Tribus *MICROHYLINI* Günther, 1858 (1843)
Chaperina Mocquard, 1892
Gastrophrynoides Noble, 1926
Glyphoglossus Günther, 1868
Kalophrynus Tschudi, 1838
Kaloula Gray, 1831
Melanobatrachus Beddome, 1878
Metaphrynella Parker, 1934
Microhyla Tschudi, 1838
Micryletta Dubois, 1987
Phrynella Boulenger, 1887
Ramanella Rao & Ramanna, 1925
Uperodon Dumeril & Bibron, 1841
 Subfamilia *PHRYNOMERINAE* Noble, 1931
Phrynomantis Peters, 1867
 Subfamilia *SCAPHIOPHYRINAE* Laurent, 1946
Paradoxophyla Blommers-Schlösser & Blanc, 1991
Scaphiophryne Boulenger, 1882

- Familia *RANIDAE* Rafinesque-Schmaltz, 1814
- Subfamilia *CERATOBATRACHINAE* Boulenger, 1884
- Batrachylodes* Boulenger, 1887
- Ceratobatrachus* Boulenger, 1884
- Discodeles* Boulenger, 1918
- Ingerana* Dubois, 1987
- Palmatorappia* Ahl, 1927
- Platymantis* Gunther, 1859
- Subfamilia *CONRAUINAE* Dubois, 1992
- Conraua* Nieden, 1908
- Subfamilia *DICROGLOSSINAE* Anderson, 1871
- Tribus *DICROGLOSSINI* Anderson, 1871
- Euphlyctis* Fitzinger, 1843
- Fejervarya* Bolkaý, 1915
- Hoplobatrachus* Peters, 1863
- Minervarya* Dubois, Ohler & Biju, 2001
- Nannophrys* Günther, 1869
- Sphaerothera* Günther, 1859
- Tribus *LIMNONECTINI* Dubois, 1992
- Annandia* Dubois, 1992
- Elachyglossa* Andersson, 1916
- Limnionectes* Fitzinger, 1843
- Taylorana* Dubois, 1987
- Tribus *OCCIDOZYGINI* Fei, Ye & Huang, 1991
- Occhiozyga* Kuhl & Van Hasselt, 1822
- Phrynoglossus* Peters, 1867
- Tribus *PAINI* Dubois, 1992
- Chaparana* Bourret, 1939
- Nanorana* Günther, 1896
- Quasipaa* Dubois, 1992
- Subfamilia *LANKANECTINAE* Dubois & Ohler, 2001
- Lankanectes* Dubois & Ohler, 2001
- Subfamilia *MANTELLINAE* Laurent, 1946
- Tribus *BOOPHINI* Vences & Glaw, 2001
- Boophis* Tschudi, 1838
- Tribus *LALIOSTOMINI* Vences & Glaw, 2001
- Aghlyptodactylus* Boulenger, 1919
- Laliostoma* Glaw, Vences & Bohme, 1998
- Tribus *MANTELLINI* Laurent, 1946
- Mantella* Boulenger, 1882
- Mantidactylus* Boulenger, 1895
- Subfamilia *MICRIXALINAE* Dubois, Ohler & Biju, 2001
- Micrixalus* Boulenger, 1888
- Subfamilia *NYCTIBATRACHINAE* Blommers-Schlösser, 1993
- Nyctibatrachus* Boulenger, 1882
- Subfamilia *PETROPEDETINAE* Noble, 1931
- Arthroleptides* Nieden, 1910
- Petropedetes* Reichenow, 1874
- Subfamilia *PHRYNORATRACHINAE* Laurent, 1941
- Dimorphognathus* Boulenger, 1906

- Ericabatrachus* Largen, 1991
Phrynobatrachus Günther, 1862
Phrynodon Parker, 1935
- Subfamily *PRYCHADENINAE* Dubois, 1987
Hildebrandtia Nieden, 1907
Lanzarana Clarke, 1983
Ptychadena Boulenger, 1917
- Subfamily *PYXICEPHALINAE* Bonaparte, 1850
Afrana Dubois, 1992
Ametia Dubois, 1987
Anhydrophryne Hewitt, 1919
Aubria Boulenger, 1917
Arthroleptella Hewitt, 1926
Cacosternum Boulenger, 1887
Microbatrachella Hewitt, 1926
Natalobatrachus Hewitt & Methuen, 1913
Nothophryne Poynton, 1963
Poyntonia Channing & Boycott, 1989
Pyxicephalus Tschudi, 1838
Strongylopus Tschudi, 1838
Tomopterna Duméril & Bibron, 1841
- Subfamily *RANINAE* Rafinesque-Schmaltz, 1814
Tribus *RANINI* Rafinesque-Schmaltz, 1814
Amolops Cope, 1865
Pseudoamolops Fei, Ye & Jiang, 2000
Rana Linnaeus, 1758
- Tribus *STAUROINI* nov.
Stauros Cope, 1865
- Subfamily *RANIXALINAE* Dubois, 1987
Indirana Laurent, 1986
- Subfamily *RHACOPHORINAE* Hoffman, 1932 (1858)
Incertae sedis
Dendrobatorana Ahl, 1927
- Tribus *BUERGERIINI* Channing, 1989
Buergeria Tschudi, 1838
- Tribus *PHILAUTINI* Dubois, 1981
Aquixalus Delorme, Dubois, Grosjean & Ohler, 2005
Kurixalus Fei, Ye & Dubois, 1999
Nyctixalus Boulenger, 1882
Philautus Gistel, 1848
Theloderma Tschudi, 1838
- Tribus *RHACOPHORINI* Hoffman, 1932 (1858)
Chirixalus Boulenger, 1893
Chiromantis Peters, 1855
Polypedates Tschudi, 1838
Rhacophorus Kuhl & Van Hasselt, 1822
- Superfamily *SOOGLOSSOIDEA* Noble, 1931
- Family *NAKIBATRACHIDAE* Biju & Bossuyt, 2003
Nankabatrachus Biju & Bossuyt, 2003

- Familia SOGLOSSIDAE Noble, 1931
Nesomantis Boulenger, 1909
Soglossus Boulenger, 1906
- Epifamilia † TRIADOBATRACHOIDIA Kuhn, 1962
 Superfamilia † TRIADOBATRACHOIDEA Kuhn, 1962
 Familia † TRIADOBATRACHIDAE Kuhn, 1962
 † *Triadobatrachus* Kuhn, 1962
- Ordo URODELA Duméril, 1806
 Incertae sedis
 † *Apricosiren* Evans & McGowan, 2002
 † *Bishara* Nessov, 1997
 † *Bissektia* Nessov, 1981
 † *Comanecturoides* Hecht & Estes, 1960
 † *Gakverpeton* Estes & Sanchiz, 1982
 † *Hylaeobatrachus* Dollo, 1884
 † *Jeholotriton* Wang, 2000
 † *Kiyatriton* Averianov & Voronkevich, 2002
 † *Laccotriton* Gao et al., 1998
 † *Marmorerpeton* Evans, Milner & Mussett, 1988
 † *Ramonellus* Nevo & Estes, 1969
 † *Smerpeton* Gao & Shubin, 2001
- Familia † BATRACHOSAURIDIDAE Auffenberg, 1958
 † *Batrachosauroides* Taylor & Hesse, 1943
 † *Mymbulakia* Nessov, 1981
 † *Opisthotriton* Auffenberg, 1961
 † *Palaeoproteus* Herre, 1935
 † *Parrisia* Denton & O'Neill, 1998
 † *Peratosauroides* Naylor, 1981
 † *Prodesmodon* Estes, 1964
- Familia † PROSIRENIDAE Estes, 1969
 † *Prosiren* Goin & Auffenberg, 1958
- Familia † SCAPHERPETONTIDAE Auffenberg & Goin, 1959
 † *Eoscapherpeton* Nessov, 1981
 † *Horezma* Nessov, 1981
 † *Lisserpeton* Estes, 1965
 † *Piceoerpeton* Meszoely, 1967
 † *Scapherpeton* Cope, 1877
- Epifamilia CRYPTOBRANCHOIDIA Fitzinger, 1826
 Superfamilia CRYPTOBRANCHOIDEA Fitzinger, 1826
 Familia CRYPTOBRANCHIDAE Fitzinger, 1826
Andrias Tschudi, 1837
 † *Aviturus* Gubin, 1991
 † *Chunerpeton* Gao & Shubin, 2003
Cryptobranchus Leuckart, 1821
 † *Ulanurus* Gubin, 1991
- Familia HYNOBIIDAE Cope, 1859 (1856)
 Subfamilia HYNOBIINAE Cope, 1859 (1856)
Batrachuperus Boulenger, 1878
Hynobius Tschudi, 1838
 † *Liadaxitriton* Dong & Wang, 1998

- Liua* Zhao & Hu, 1983
Onychodactylus Tschudi, 1838
Pachyhynobius Fei, Qu & Wu, 1983
† *Parahynobius* Venczel, 1999
Pseudohynobius Fei & Ye, 1983
Ranodon Kessler, 1866
Salamandrella Dybowski, 1870
Subfamilia *PROTOHYNOBINAE* Fei & Ye, 2000
Protohynobius Fei & Ye, 2000
Epifamilia † *KARAUIROIDIA* Ivachnenko, 1978
Superfamilia † *KARAUIROIDEA* Ivachnenko, 1978
Familia † *KARAURIDAE* Ivachnenko, 1978
† *Karaurius* Ivachnenko, 1978
† *Kokartus* Nessov, 1981
Epifamilia *SALAMANDROIDIA* Goldfuss, 1820
Incertae sedis
† *Iridotriton* Evans, Lally, Chure, Elder & Maisano, 2005
† *Valdotriton* Evans & Milner, 1996
Superfamilia *AMBYSTOMATOIDEA* Gray, 1850
Familia *AMBYSTOMATIDAE* Gray, 1850
Ambystoma Tschudi, 1838
† *Amphitriton* Rogers, 1976
Familia *DICAMPTODONTIDAE* Tihen, 1958
† *Ambystomichnus* Peabody, 1954
† *Bargmannia* Herre, 1955
† *Chrysotriton* Estes, 1981
Dicamptodon Strauch, 1870
† *Geyerella* Herre, 1950
† *Wolterstorffella* Herre, 1950
Superfamilia *AMPHIUMOIDEA* Gray, 1825
Familia *AMPHIUMIDAE* Gray, 1825
Amphiuma Garden, 1821
† *Paleoamphiuma* Rieppel & Grande, 1998
† *Proamphiuma* Estes, 1969
Familia *PLETHODONTIDAE* Gray, 1850
Subfamilia *HEMIDACTYLINAE* Hallowell, 1856 (1850)
Tribus *BOLITOGLOSSINI* Hallowell, 1856
Batrachoseps Bonaparte, 1841
Bohtaglossa Dumeril, Bibron & Dumeril, 1854
Bradytriton Wake & Elias, 1983
Chiropterotriton Taylor, 1944
Cryptotriton Garcia-Paris & Wake, 2000
Dendrotriton Wake & Elias, 1983
Ixalotriton Wake & Johnson, 1989
Lineatriton Tanner, 1950
Nototriton Wake & Elias, 1983
Nyctanolis Elias & Wake, 1983
Oedipina Keferstein, 1868
Parvimolge Taylor, 1944

- Pseudoeurycea* Taylor, 1944
Thorius Cope, 1869
- Tribus *HEMIDACTYLINI* Hallowell, 1856 (1850)
Hemidactylum Tschudi, 1838
- Tribus *SPELERPINI* Cope, 1859
Eurycea Rafinesque, 1822
Gyrinophilus Cope, 1869
Pseudotriton Tschudi, 1838
Stereochilus Cope, 1869
- Subfamilia *PLETHODONTINAE* Gray, 1850
- Tribus *DESMOGNATHINI* Gray, 1850
Aneides Baird, 1849
Desmognathus Baird, 1850
Ensatina Gray, 1850
Hydromantes Gistel, 1848
Karsenia Min, Yang, Bonett, Vieites, Brandon & Wake, 2005
Leurognathus Moore, 1899
Phaeognathus Highton, 1961
- Tribus *PLETHODONTINI* Gray, 1850
Plethodon Tschudi, 1838
- Superfamilia *PROTEOIDEA* Gray, 1825
- Familia *PROTEIDAE* Gray, 1825
† *Mioproteus* Estes & Darevsky, 1978
Necturus Rafinesque, 1819
† *Orthophrya* Meyer, 1845
Proteus Laurenti, 1768
- Superfamilia *RHYACOTRITONOIDEA* Tihen, 1958
- Familia *RHYACOTRITONIDAE* Tihen, 1958
Rhyacotriton Dunn, 1920
- Superfamilia *SALAMANDROIDEA* Goldfuss, 1820
- Familia *SALAMANDRIDAE* Goldfuss, 1820
† *Archaeotriton* Meyer, 1860
† *Brachycornus* Meyer, 1860
† *Chelotriton* Pomel, 1853
Gniglossa Bocage, 1864
Cynops Tschudi, 1838
Echmornotriton Nussbaum & Brodie, 1982
Euproctus Gené, 1838
† *Koailhella* Herre, 1950
Lissotriton Bell, 1839
Lyciasalamandra Veith & Steinfartz, 2004
† *Megalotriton* Zittel, 1888
Mertensiella Wolterstorff, 1925
Mesotriton Bolckay, 1927
Neurergus Cope, 1862
Notophthalmus Rafinesque, 1820
† *Oligosemia* Navas, 1922
Ommatotriton Gray, 1850
Pachytriton Boulenger, 1878
† *Palaeopleurodeles* Herre, 1941

- Paramesotriton* Chang, 1935
- Pleurodeles* Michahelles, 1830
- † *Procynops* Young, 1965
- Salamandra* Laurenti, 1768
- Salamandrina* Fitzinger, 1826
- Taricha* Gray, 1850
- Triturus* Rafinesque, 1815
- Tylosotriton* Anderson, 1871
- Epifamilia *SIRENOIDIA* Gray, 1825
- Superfamilia *SIRENOIDEA* Gray, 1825
- Familia *SIRENIDAE* Gray, 1825
 - † *Habrosaurus* Gilmore, 1928
 - † *Kababisha* Evans, Milner & Werner, 1996
 - † *Noterpeton* Rage, Marshall & Gayet, 1993
 - Pseudobranchius* Gray, 1825
 - Siren* Österdam, 1766
- Superordo *GYMNOPHIONA* Rafinesque-Schmaltz, 1814
- Ordo *GYMNOPHIONA* Rafinesque-Schmaltz, 1814
- Incertae sedis
 - † *Rubricacaecilia* Evans & Sigogneau-Russell, 2001
- Epifamilia *CAECILIOIDIA* Rafinesque-Schmaltz, 1814
- Superfamilia *CAECILIOIDEA* Rafinesque-Schmaltz, 1814
- Familia *CAECILIIDAE* Rafinesque-Schmaltz, 1814
 - † *Apodops* Estes & Wake, 1972
 - Boulengerula* Tornier, 1897
 - Branlotyphlus* Taylor, 1968
 - Caecilia* Linnaeus, 1758
 - Dermophis* Peters, 1879
 - Gegeneophis* Peters, 1879
 - Geotrypetes* Peters, 1880
 - Grandisoma* Taylor, 1968
 - Gymnopsis* Peters, 1874
 - Herpele* Peters, 1879
 - Hypogeophis* Peters, 1879
 - Idiocranium* Parker, 1936
 - Indotyphlus* Taylor, 1960
 - Luetkenotyphlus* Taylor, 1968
 - Microacaecilia* Taylor, 1968
 - Mimonophonops* Taylor, 1968
 - Oscacaecilia* Taylor, 1968
 - Parvacaecilia* Taylor, 1968
 - Praslinia* Boulenger, 1909
 - Schistometopum* Parker, 1941
 - Siphonops* Wagler, 1830
 - Sylvacaecilia* Wake, 1987
- Familia *ICHTHYOPHIDAE* Taylor, 1968 (1843)
 - Caudacaecilia* Taylor, 1968
 - Ichthyophis* Fitzinger, 1826
- Familia *SCOLECOMORPHIDAE* Taylor, 1969
 - Crotaphatrema* Nussbaum, 1985
 - Scolecormorphus* Boulenger, 1883

- Familia *TYPHLOECTIDAE* Taylor, 1968
Atretochoana Nussbaum & Wilkinson, 1995
Chthonerpeton Peters, 1879
Nectocaecilia Taylor, 1968
Potomotyphlus Taylor, 1968
Typhlonectes Peters, 1879
- Familia *URAEOTYPHLIDAE* Nussbaum, 1979
Uraeotyphlus Peters, 1879
- Superfamilia *RHINATREMATOIDEA* Nussbaum, 1977
- Familia *RHINATREMATIDAE* Nussbaum, 1977
Epicrionops Boulenger, 1883
Rhinatrema Duméril & Bibron, 1841
- Epifamilia † *EOCAECILIOIDEA* Jenkins & Walsh, 1993
- Superfamilia † *EOCAECILIOIDEA* Jenkins & Walsh, 1993
- Familia † *EOCAECILIDAE* Jenkins & Walsh, 1993
† *Eocaecilia* Jenkins & Walsh, 1993

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LITERATURE CITED

- ALTIG, R. & McDIARMID, R. W., 1999. Diversity. Familial and generic characterizations. In: R. W. McDIARMID & R. ALTIG (ed.), *Tadpoles - The biology of anuran larvae*, Chicago & London, Univ. Chicago Press: 295-337.
- BIJL, S. D. & BOSSUYT, F., 2003. New frog family from India reveals an ancient biogeographical link with the Seychelles. *Nature*, **425**: 711-714.
- BOSSUYT, F. & DUBOIS, A., 2001. A review of the frog genus *Philautus* Gistel, 1848 (Amphibia, Anura, Ranidae, Rhacophorinae). *Zeylanica*, **6** (1): 1-112.
- CANNATELLA, D. & HILLIS, D. M., 2004. Amphibians. Leading a life of slime. In: J. CHACRAFT & M. J. DONOGHUE (ed.), *Assembling the tree of life*, New York, Oxford University Press: 430-450.
- CHIPPINDALE, P. T., BONETT, R. M., BALSIN, A. S. & WIENS, J. J., 2004. Phylogenetic evidence for a major reversal of life-history evolution in plethodontid salamanders. *Evolution*, **58** (12): 2809-2822.
- CRAWFORD, A. J. & SMITH, E. N., 2005. Cenozoic biogeography and evolution in direct-developing frogs of Central America (Leptodactylidae: *Eleutherodactylus*) as inferred from a phylogenetic analysis of nuclear and mitochondrial genes. *Molecular Phylogenetics & Evolution*, **35**: 536-555.
- DARST, C. R. & CANNATELLA, D. C., 2004. Novel relationships among hybrid frogs inferred from 12S and 16S mitochondrial DNA sequences. *Molecular Phylogenetics & Evolution*, **31**: 462-475.
- DELOIRME, M., DUBOIS, A., KOSICH, J. & VENCES, M., 2004. Molecular phylogenetic relationships of *Lankancistrus* corruquian from Sri Lanka: endemism of South Asian frogs and the concept of monophyly in phylogenetic studies. *Alytes*, **22** (1-2): 53-64.
- DUBOIS, A., 1981. Liste des genres et sous-genres nominaux de Ranioidea (Amphibiens, Anoures) du monde, avec identification de leurs espèces types: conséquences nomenclaturales. *Mémoires de l'Académie des Sciences et des Lettres de Paris*, **15**, suppl., 225-284.
- , 1983. Classification et nomenclature supragénérique des Amphibiens Anoures. *Bulletin mensuel de la Société française de Zoologie*, **52**: 270-276.
- , 1984. La nomenclature supragénérique des Amphibiens Anoures. *Mémoires du Muséum national d'Histoire naturelle*, (A) **131**: 1-64.
- , 1985. Miscellaneous nomenclatorica batrachologica (VII). *Alytes*, **4** (2): 61-78.
- , 1987a. Miscellaneous taxonomica batrachologica (I). *Alytes*, "1986", **5** (1-2): 7-95.

- 1987b Living amphibians of the world: a first step towards a comprehensive checklist. *Alytes*, 5 (3): 99-149
- 1987c. - Again on the nomenclature of frogs. *Alytes*, 6 (1-2): 27-55
- 1987d - Discoglossidae Günther, 1858 (Amphibia, Anura): proposed conservation. *Alytes*, 6 (1-2): 56-68
- 1988 - The genus in zoology: a contribution to the theory of evolutionary systematics. *Mémoires du Muséum national d'Histoire naturelle*, (A), 140: 1-123
- 1992. Notes sur la classification des Ranidae (Amphibiens, Anoures). *Bulletin mensuel de la Société linnéenne de Lyon*, 61 (10): 305-352
- 1999 Miscellaneous nomenclatorica batrachologica. 19 Notes on the nomenclature of Ranidae and related groups. *Alytes*, 17 (1-2): 81-100
- 2000 Synonymies and related lists in zoology: general proposals, with examples in herpetology. *Dumerilia*, 4 (2): 33-98
- 2003 - True frogs (Ranidae). In: M. HUTCHINS, W. E. DUELLMAN & N. SCHLAGER (ed.), *Grazmek's animal life encyclopedia*, 2nd edition, Volume 6, *Amphibians*, Farmington Hill, Michigan, Gale Group: 245-264
- 2004a. - *Amphibia Mundi*: call for contributions. *Alytes*, 21 (3-4): 171-173.
- 2004b - The higher nomenclature of recent amphibians. *Alytes*, 22 (1-2): 1-14
- 2005a Proposed Rules for the incorporation of nomina of higher-ranked zoological taxa in the *International Code of Zoological Nomenclature* 1 Some general questions, concepts and terms of biological nomenclature. *Zoosystema*, 27 (2): 365-426.
- 2005b Proposed Rules for the incorporation of nomina of higher-ranked zoological taxa in the *International Code of Zoological Nomenclature* 2 The proposed Rules and their rationale. *Zoosystema*, in press
- 2006 Proposed Rules for the incorporation of nomina of higher-ranked zoological taxa in the *International Code of Zoological Nomenclature* 3 A detailed example: the higher nomina of recent Amphibia. *Zoosystema*, in press
- DUELLMAN, W. E., 1993 - Amphibian species of the world: additions and corrections. *University of Kansas Museum of natural History special Publications*, 21. [i-ii] + i-iii + 1-372.
- 2003 Leptodactylid frogs (Leptodactylidae). In: M. HUTCHINS, W. E. DUELLMAN & N. SCHLAGER (ed.), *Grazmek's animal life encyclopedia*, 2nd edition, Volume 6, *Amphibians*, Farmington Hill, Michigan, Gale Group: 155-171
- EMERSON, S. B., RICHARDS, C., DREWES, R. C. & KJER, K. M., 2000 - On the relationships among ranoid frogs: a review of the evidence. *Herpetologica*, 56 (2): 209-230
- EVANS, B. J., KELLEY, D. B., MELNICK, D. J. & CANNATELLA, D. C., 2005 Evolution of RAG-1 in polyploid clawed frogs. *Molecular Biology & Evolution*, 22 (5): 1193-1207
- EVANS, B. J., KELLEY, D. B., TINSLEY, R. C., MELNICK, D. J. & CANNATELLA, D. C., 2004 A mitochondrial DNA phylogeny of African clawed frogs: phylogeography and implications for polyploid evolution. *Molecular Phylogenetics & Evolution*, 33: 197-213
- EVANS, S. E., LALLY, C., CHURE, D. C., ELDER, A. & MAISANO, J. A., 2005 A late Jurassic salamander (Amphibia: Caudata) from the Morrison formation of North America. *Zoological Journal of the Linnean Society*, 143: 599-616
- FEI, L., YE, C. & HUANG, Y., 1991 Key to Chinese Amphibia. Chongqing, Editions of Sciences and Techniques, "1990" [i-iv] + 1-2 + 1-364. [In Chinese]
- FEI, L., YE, C., JIANG, J., XIE, F. & HUANG, Y., 2005 An illustrated key to Chinese amphibians. Sichuan Publishing Group, Sichuan Publishing House of Science & Technology: i-v + 1-340, pl. 1-12
- FORD, L. S. & CANNATELLA, D. C., 1993 - The major clades of frogs. *Herpetological Monographs*, 7: 94-117.
- FROST, D. R., (ed.), 1985 *Amphibian species of the world*. Lawrence, Allen Press & Assoc. Syst. Coll. [i-iv] + i + v + 1-732.
- GARCIA-PARIS, M., BUCHHOLZ, D. R. & PARRA-OLEA, G., 2003 Phylogenetic relationships of Pelobatoidae re-examined using mtDNA. *Molecular Phylogenetics & Evolution*, 28: 12-23
- GARCIA-PARIS, M., MONTORI, A. & ALONSO ZARAZAGA, M. A., 2004 Apéndice 1 Nomenclatura. Lista de sinónimos y combinaciones. In: M. GARCIA-PARIS, A. MONTORI & P. HERRERO, vol. 24, *Amphibia Lissamphibia*, in M. A. RAMOS et al. (ed.), *Fauna ibérica*, Madrid, Museo Nacional de Ciencias Naturales & Consejo Superior de Investigaciones Científicas: 589-602
- GLAW, F., KOHLER, J., LÖTTIG, S. & VENCES, M., 1998 Vorläufige Liste und Bibliographie neubeschriebener Amphibienarten und -unterarten von 1993 bis 1997. *Elaphe*, 6 (1): 1-xxiv
- HAAS, A., 2003 Phylogeny of frogs as inferred from primary larval characters (Amphibia: Anura). *Cladistics*, 19: 23-89
- HARDING, K. A., 1982 Courtship display in a Bornean frog. *Proceedings of the biological Society of Washington*, 95: 621-624
- HILLIS, D. M., CHAMBERLAIN, D. A., WILCOX, T. P. & CHIPPINDALE, P. T., 2001 A new species of subtropical blind salamander (Plethodontidae: Hemidactylini: *Eurycea typhlomolge*) from Austin, Texas, and a systematic revision of central Texas paedomorphic salamanders. *Herpetologica*, 57 (3): 266-280
- HILLIS, D. M. & WILCOX, T. P., 2005 Phylogeny of the New World true frogs (Rana). *Molecular Phylogenetics & Evolution*, 34: 299-314
- HOLGG, S., VENCES, M., BRINAMANN, H. & MEYER, A., 2004 Phylogeny and comparative substitution rates of frogs inferred from sequences of three nuclear genes. *Molecular Biology & Evolution*, 21 (7): 1188-1200
- HUTCHINS, M., DUELLMAN, W. E. & SCHLAGER, N., ed., 2003 *Amphibia*. In: M. HUTCHINS, ed., *Grazmek's animal life encyclopedia*, Second Edition, Volume 6, Farmington Hills, Michigan, Gale Group: i-xvi + 1-307.

- KAPLAN, M., 2002. Histology of the anteroventral part of the breast-shoulder apparatus of *Brachycephalus ephippium* (Brachycephalidae) with comments on the validity of the genus *Pylophryne* (Brachycephalidae). *Amphibia-Reptilia*, **23** (2): 225-227.
- LAURENT, R. E., 1980. - Esquisse d'une phylogénèse des Anoures. *Bulletin de la Société zoologique de France*, **104**: 397-422.
- , 1986. Sous-classe des Lissamphibiens (Lissamphibia) Systematique. In P.-P. GRASSE & M. DELSOL (ed.), *Traité de Zoologie*, **14**, Amphibiens, fasc. I-B, Paris, Masson: 594-796.
- MAGLIA, A. M., 2003. Fire-bellied toads and barbouriids (Bombinatoridae). In: M. HUTCHINS, W. E. DUELLMAN & N. SCHLAGER (ed.), *Grzimek's animal life encyclopedia*, 2nd edition, Volume **6**, *Amphibians*, Farmington Hill, Michigan, Gale Group: 83-88.
- MAYR, E., 1981. Biological classification: toward a synthesis of opposing methodologies. *Science*, **214**: 510-516.
- MCGOWAN, G. & EVANS, S. E., 1995. - Albanerpetontid amphibians from the Cretaceous of Spain. *Nature*, **373** (6510): 143-145.
- MIN, M. S., YANG, S. Y., BONETT, R. M., VIEITES, D. R., BRANDON, R. A. & WAKE, D. B., 2005. Discovery of the first Asian plethodontid salamander. *Nature*, **435**: 87-90.
- MUELLER, R. L., MACEY, J. R., JAEKEL, M., WAKE, D. B. & BOORE, J. L., 2004. Morphological homoplasy, life history evolution, and historical biogeography of plethodontid salamanders inferred from complete mitochondrial genomes. *Proceedings of the national Academy of Sciences of the USA*, **101** (38): 13820-13825.
- ROELANTS, K. & BOSSUYT, F., 2005. Archaeobatrachian paraphyly and Pangaea diversification of crown-group frogs. *Systematic Biology*, **54** (1): 111-126.
- ROELANTS, K., JIANG, J. & BOSSUYT, F., 2004. - Endemic ranid (Amphibia: Anura) genera in southern mountain ranges of the Indian subcontinent represent ancient frog lineages: evidence from molecular data. *Molecular Phylogenetics & Evolution*, **31**: 730-740.
- SAN MAURO, D., VENCES, M., ALCOBENDAS, M., ZARDOYA, R. & MEYER, A., 2005. Initial diversification of living amphibians predated the breakup of Pangaea. *The American Naturalist*, **165**: 590-599.
- SANCHEZ, B., 1998. *Salvador*. In: P. WELLNHOFER (ed.), *Handbuch der Paläoherpétologie*, Teil **4**, München, Friedrich Pfeil: i-xii + 1-275.
- VAN DER MEIJDEN, A., VENCES, M., HOBGG, S. & MEYER, A., 2005. - A previously unrecognized radiation of ranid frogs in Southern Africa revealed by nuclear and mitochondrial DNA sequences. *Molecular Phylogenetics & Evolution*, in press.
- VAN DER MEIJDEN, A., VENCES, M. & MEYER, A., 2004. Novel phylogenetic relationships of the enigmatic brevicipitine and scaphiophrynine toads as revealed by sequences from the nuclear *Rag-1* gene. *Proceedings of the royal Society of London, (B)* (suppl.), **271**: S378-S381.
- VENCES, M. & GLAW, F., 2001. When molecules claim for taxonomic changes: new proposals on the classification of Old World treefrogs. *Spixiana*, **24**: 85-92.
- WAKE, D. B., 2003. Lungless salamanders (Plethodontidae). In: M. HUTCHINS, W. E. DUELLMAN & N. SCHLAGER (ed.), *Grzimek's animal life encyclopedia*, 2nd edition, Volume **6**, *Amphibians*, Farmington Hill, Michigan, Gale Group: 389-404.